

ABSTRACT

Mokahamad Fikri Muhclison. 24020121140147. Microanatomy of the Liver of Hybrid Duck Embryos (*Anas platyrhynchos*) after *In Ovo* Injection of Vitamin E and Selenium. Supervised by Kasiyati and Sri Isdadiyanto.

Duck hatching in Indonesia is still carried out on a small scale using natural incubation, while the demand for ducks is increasing among the community. Antioxidant supplementation can improve hatching performance. Vitamin E acts as an antioxidant, while selenium functions as a cofactor for antioxidant enzymes, both helping to prevent free radical damage and support hatching performance. This study aimed to analyze the liver microanatomy of hybrid duck embryos after in ovo injection of vitamin E and selenium. A Completely Randomized Design (CRD) was used with four treatment groups, control group (no injection, K0), eggs injected with 0.1 mL of 0.89% physiological saline (K1), eggs injected with 0.1 mL of vitamin E+Se (K2), and eggs injected with 0.15 mL of vitamin E+Se (K3). Each group consisted of 12 replicates, with a total of 48 duck eggs. Data were analyzed using *Analysis of Variance* (ANOVA) at a 5% significant level ($P < 0.05$), using SPSS version 25. ANOVA results showed no significant differences ($P > 0.05$) in hepatocyte diameter, central vein diameter, liver weight, and hepatosomatic index (HSI). It was concluded that the in ovo injection of vitamin E as an antioxidant and selenium as an antioxidant enzyme cofactor could not changes in liver structure, indicating that liver structure and function developed properly.

Keywords: *antioxidant, embryogenesis, hepatocytes, hepatosomatic index, central vein*